

NSDI Transportation Framework Standard & The Geospatial One Stop Data Content Standard

A Tale Of Two Standards

◆ ID Standard – 1998

- Facilitate the exchange of data about roads between participating agencies
- Data exchange standard not a data model
- FGDC standard

◆ Geospatial One Stop Transportation – 2001

- Uses a different mechanism to achieve this
- ANSI standard

NSDI Transportation ID Standard

NSDI Road Identification Standard

Problem Being Addressed:

- ◆ Road network databases are widely used for different applications
 - Cartographic layers for orienting other spatial data
 - location referencing (addresses, linear referencing)
 - network pathbuilding
- ◆ Federal agencies will not build a national road database
 - No agency has a mandate to build it
 - Insufficient federal resources
 - Road data is too dynamic to maintain centrally
 - Better data is already being developed at the local level

NSDI Road Identification Standard

Issues in Sharing Road Network Data:

- ◆ Networks serve multiple applications
 - simple cartography (geo-spatial accuracy)
 - location referencing (linear data model)
 - network pathbuilding (network topology)
- ◆ Applications segment networks differently
 - No common “transportation segment”
 - Networks are infinitely divisible
- ◆ Database Maintenance
 - Transactional updates
 - Evolutionary enhancements (e.g., better coordinates)

NSDI Road Identification Standard

Functional Requirements:

- ◆ Independent from any cartographic scale or topological network, but facilitate creation of any user-defined network.
- ◆ Identifiers remain stable, both temporally and across different applications.
- ◆ Minimize additional burden on database developers and users:
 - Can be implemented with existing network databases
 - Process can be done using automated processes
- ◆ Facilitate integration of networks developed by different sources
- ◆ Facilitate enhancements to spatial accuracy and level of detail

NSDI Road Identification Standard

Key Components of the Standard:

- ◆ Two entity types used to represent a transportation segment:
 - Framework Transportation Reference Point (FTRP)
 - Framework Transportation Segment (FTSeg)
- ◆ FTSeg have no geometry (e.g., shape points)
- ◆ Attributes are attached to FTSeg either directly or via one or more locational referencing methods.

NSDI Road Identification Standard

- ◆ The standard is expressed as a set of feature “naming” rules and file formats.
- ◆ The standard is NOT a data model for production databases.
- ◆ The files are transactional in design to support chronological updates.
- ◆ Does not define a topological network.

NSDI Road Identification Standard

- ◆ Developed in a box
- ◆ Technology independent
- ◆ Vendor independent
- ◆ No implementation procedures – how to
 - You are on your own

Geospatial One Stop

- ◆ Members of transportation community
- ◆ National standard
 - Aided by modelers
- ◆ A plan on how to implement it & how it will be used

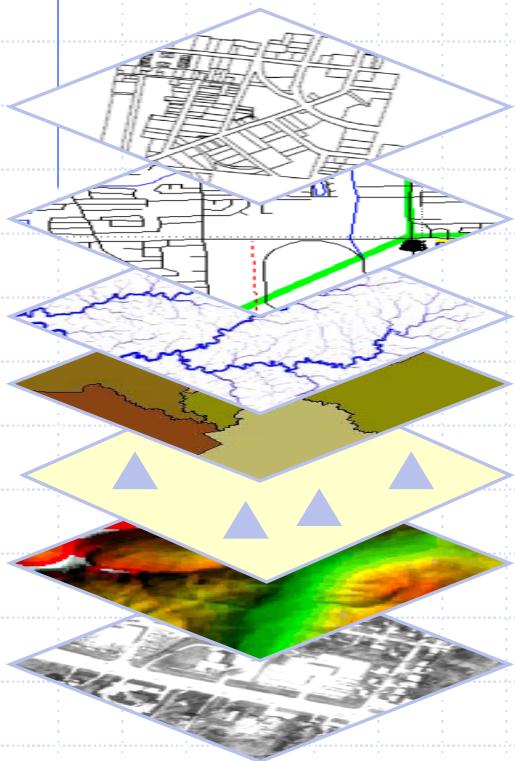


The Next Step

The Geospatial One Stop

Access, Sharing, Interoperability and Relationships to Build Once, Use Many Times

Framework/Core Data



Cadastral

Transportation

Hydrography

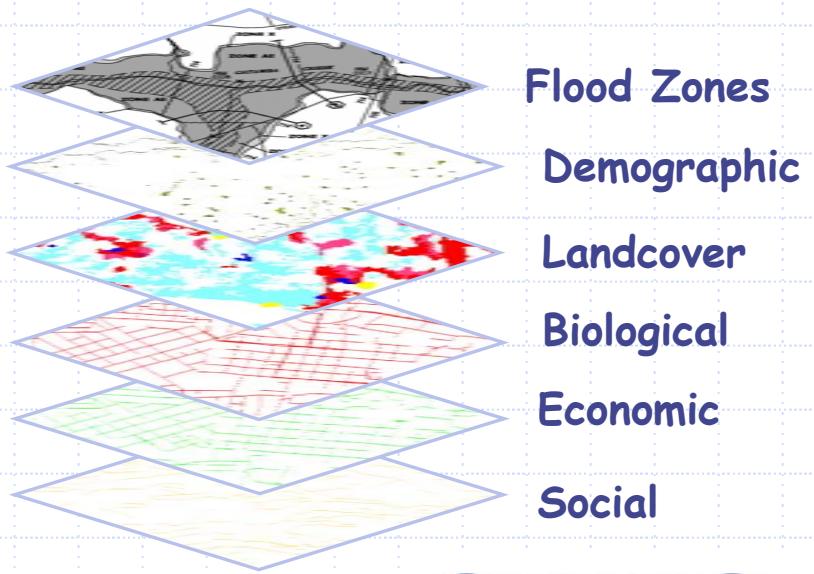
Government Units

Geodetic Control

Elevation

Imagery

Other Thematic Data



Flood Zones

Demographic

Landcover

Biological

Economic

Social

Spatial Data Is Critical to Business and Government

- ◆ Government information is a valuable national resource - OMB A-130
- ◆ Estimated 80% of government data has spatial component
- ◆ Geography serves as the common thread to address diverse issues
- ◆ Can't effectively do Homeland Security or E-Gov without geographic information

Geospatial One Stop For Transportation

Core data content standard

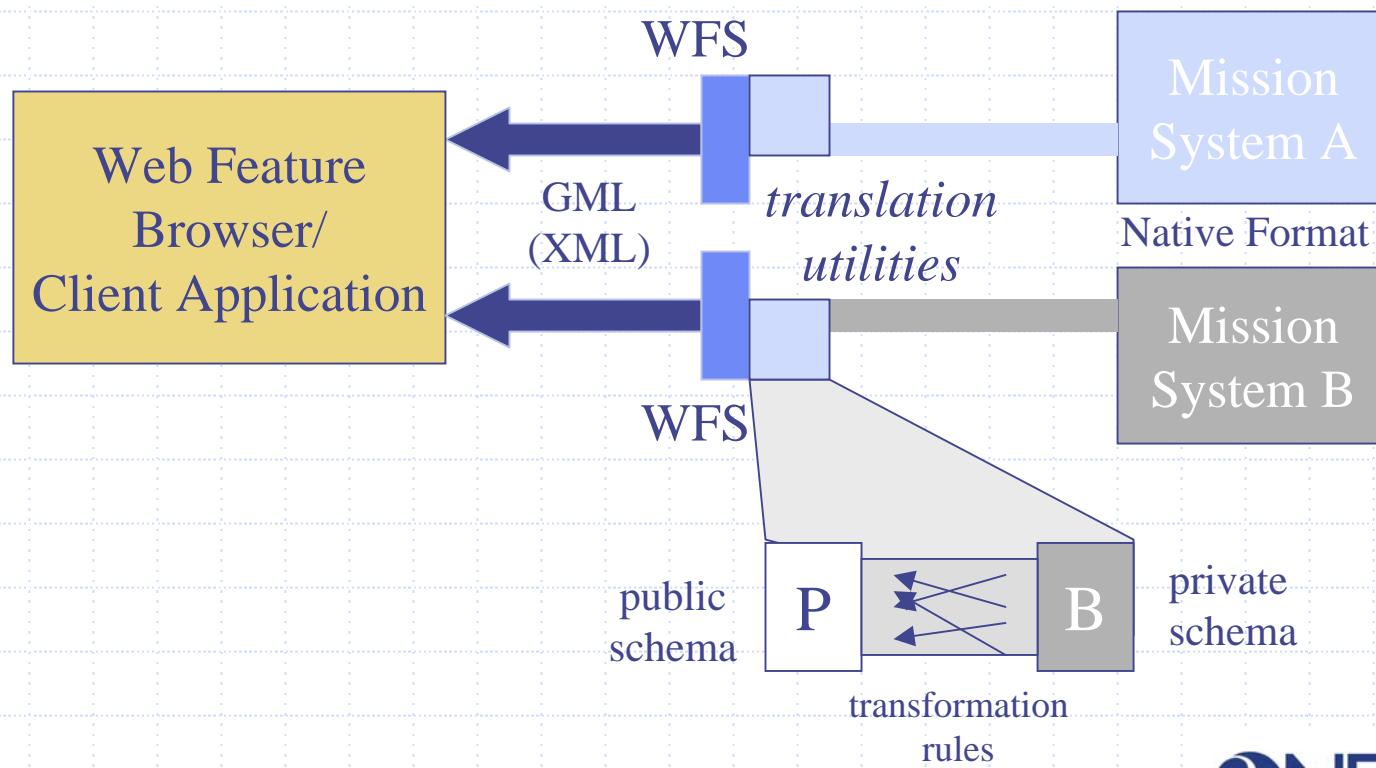
Why Framework 'Core'?

- ◆ Minimal or adequate content, as determined by a broad community will serve many
- ◆ Framework not designed to support all business rules and requirements, but can provide a base for common exchange
- ◆ A common encoding provides an easy target for systems to import and export and provides a means for conformance tests
- ◆ Permanent Feature IDs facilitate relation of external information to the data

Common Elements of Core

- ◆ Feature types (classes) included
- ◆ Unique feature identifier system
- ◆ Basic attributes
- ◆ Controlled vocabulary, codes, authorities
- ◆ Valid at a range of scales and resolutions
- ◆ Multiple representations of same features possible

OGC Web Feature Service



What is the Geospatial One-Stop Portal?

- ◆ Middleware that integrates access to distributed community data services
- ◆ Community-wide access point for all participating data and map services
- ◆ Employs standard software interfaces to connect to catalog, map, and feature services set up by providers
- ◆ Generic user interface that could be adapted by other communities

Transportation

More Than Just Roads

- ◆ Roads
- ◆ Air
- ◆ Transit
- ◆ Rail
- ◆ Waterways ACE

Time Line

What's Next

◆ Air – Kickoff August 2002

Final February 2003

◆ Transit – Kickoff September 2002

Final March 2003

◆ Rail – Kickoff October 2002

April 2003

Participation Types

- ◆ ***Subscriber:*** interested in listening only to progress of the design group
- ◆ ***Contributor:*** interested in offering model input, background information to be considered in design
- ◆ ***Reviewer:*** interested in reviewing various drafts of the Standard when ready
- ◆ ***Modeling Advisory Team:*** Vested members assisting modelers, writing, and editing the Standard

Project Goals

- ◆ Design and implement a comprehensive government to government web portal for geospatial information
- ◆ Provide fast, low cost, reliable access to Geospatial Data needed for government operations
- ◆ Facilitate G2G geospatial interactions needed for vertical missions such as Homeland Security
- ◆ Obtain multi-sector input for geographic information standards to create consistency needed for interoperability and to stimulate market development of tools

What are the Outcomes ?

- ◆ All levels of government have better, faster, less expensive access to reliable data to expedite citizen service
- ◆ Improved ability to leverage and align resources for data acquisition partnerships and reuse of accessible geospatial data
- ◆ All E-Gov Initiatives are spatially enabled through data and functional capability from Geospatial One-Stop
- ◆ Homeland Security and Government Mission needs are supported with geospatial information

Are You Interested?

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